



# Addition and Subtraction 1

## SOLID STATE SOFTWARE™ COMMAND MODULE

The Addition and Subtraction 1 Command Module provides young children with an exciting introduction to basic mathematical concepts involving the numbers zero through nine. The nine colorful activities begin with counting and move on to addition and subtraction, building on the skills learned in previous exercises.

The optional Texas Instruments *Solid State Speech*™ Synthesizer (sold separately) adds the feature of computer speech to the activities. Your child can now hear, as well as see, the instructions and exercises in the module.

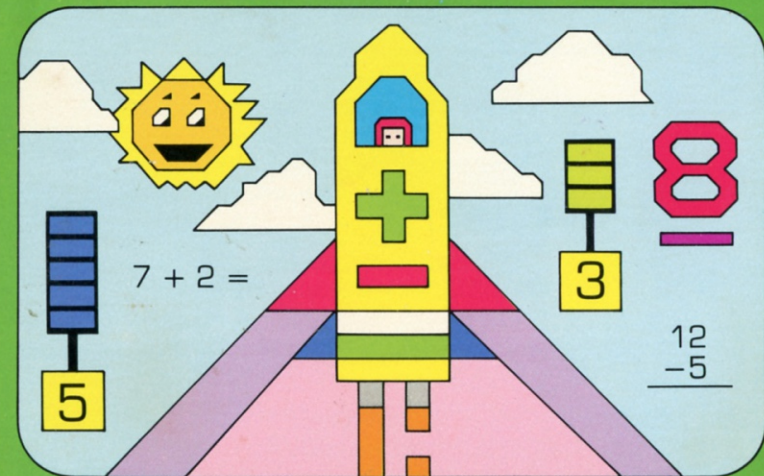
**Addition and Subtraction 1** module activities include:

- **Counting Bars** and **Getting Ready** — Introduce the counting numbers zero through nine.
- **Addition Action** and **Subtraction Action** — Introduce problems and word sentences with color, graphics, and sound.
- **Add Another Way** and **Subtract Another Way** — Introduce vertical problems and provide drills in the vertical format.
- **Across and Down** — Provides further practice in addition and subtraction.
- **Addition Table** and **Subtraction Table** — Supply more in-depth practice exercises and review the skills presented in the module.

**Adds 18K bytes of active memory with stored program to your TI Home Computer.**

Command Module program and data base contents  
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**Makes learning addition and subtraction facts for numbers zero through nine fun and challenging.**



TEXAS INSTRUMENTS  
INCORPORATED  
DALLAS, TEXAS





## Quick Reference Guide

Note that the key sequences required to access special functions depend on the type of computer console you have. Important keystroke sequences are summarized here for your quick reference.

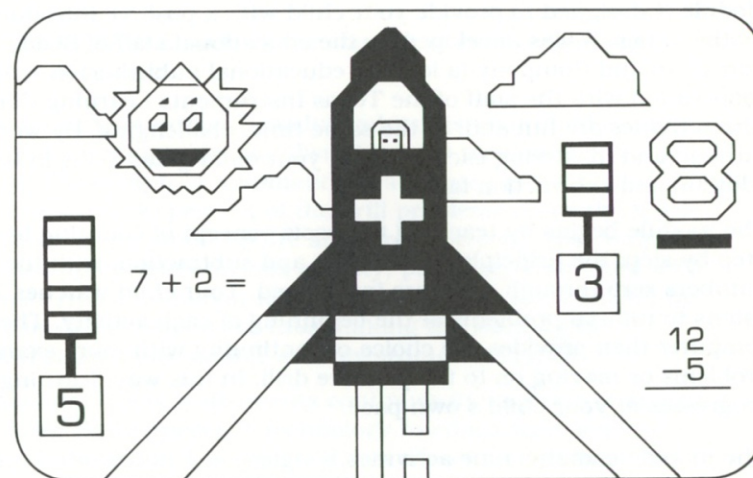
<u>TI-99/4</u>	<u>TI-99/4A</u>	<u>Action</u>
<b>A</b> (AID)	<b>A or FCTN 7</b> (AID)	Returns to the beginning of the activity in progress if pressed while the cursor is flashing.
<b>R</b> (REDO)	<b>R or FCTN 8</b> (REDO)	
<b>Z</b> (BACK)	<b>Z or FCTN 9</b> (BACK)	
<b>W</b> (BEGIN)	<b>W or FCTN 5</b> (BEGIN)	Returns to the Addition and Subtraction 1 selection list if pressed while the cursor is flashing.
<b>Period Key (.)</b>	<b>Period Key (.)</b>	Gives a brief overview of each activity if pressed when the selection list is displayed. When the selected activity is reached, release the key, and tutorial exercise for that activity begins. After you view all activities once, the selection list is displayed again.
<b>ENTER</b>	<b>ENTER</b>	Eliminates the pauses after the tutorial routine and between the problems. Pressing <b>ENTER</b> also bypasses the "Do you want one more?" display between the tutorial routine and the drill.
<b>SPACE BAR</b>	<b>SPACE BAR</b>	Stops the program. When it is released, the program continues.
<b>SHIFT Q</b> (QUIT)	<b>FCTN =</b> (QUIT)	Returns to the master title screen.

*Note:* To assure that your child does not accidentally press **A**, **R**, **Z**, or **W**, he or she must hold the key down for one second before the appropriate action occurs.



TEXAS INSTRUMENTS  
HOME COMPUTER

## Addition and Subtraction 1



This *Solid State Software*™ Command Module is designed to be used with the Texas Instruments Home Computer. Its preprogrammed solid-state memory expands the power, versatility, and capability of your Home Computer.

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Command Module program and data base contents  
copyright © 1981 Scott, Foresman and Company.  
See important warranty information at back of book.



#### NOTE TO PARENTS

Numbers hold a particular fascination for children, and they see an understanding of numerical concepts as a link to growing up. It's an important advantage for children to be introduced to mathematical skills at a young age, when their natural curiosity and interest is at a high level.

The Addition and Subtraction 1 *Solid State Software*™ Command Module is designed to provide your child with a positive introduction to mathematics. It was developed by the educational staff of Scott, Foresman and Company (a leading educational publisher) in cooperation with the staff of the Texas Instruments Learning Center. The activities are fun and, at the same time, challenging. By working through and mastering each activity, your child gains skills in basic addition and subtraction facts.

The module begins by teaching the basic concept of counting to nine. Step-by-step, the principles of addition and subtraction, with the numbers zero through nine, are introduced. Your child watches and listens to tutorial problems at the beginning of each activity. The computer then provides the choice of continuing with more example problems or moving on to the practice drill. In this way, learning progresses at your child's own pace.

The module contains nine activities.

- COUNTING BARS introduces the counting concept for the numbers zero through nine.
- GETTING READY reinforces the counting skills for the numbers zero through nine by counting objects.
- ADDITION ACTION moves objects together to form the horizontal addition problem and then displays the related word sentence.
- ADD ANOTHER WAY changes horizontal problems into the vertical format.



- SUBTRACTION ACTION introduces the fundamentals of horizontal subtraction problems.
- SUBTRACT ANOTHER WAY presents a smooth transition from the horizontal into the vertical format.
- ACROSS AND DOWN provides further practice with horizontal and vertical problems, in both addition and subtraction, using a complete-the-table drill.
- ADDITION TABLE reinforces the addition concept with a practice game.
- SUBTRACTION TABLE reviews the concept of subtraction with another practice game.

The Addition and Subtraction 1 module advances your child to more difficult drills according to the number of correct responses given in each activity. The computer automatically advances to the next activity if your child answers 80 percent of the drill problems correctly. If less than 60 percent of the problems are answered correctly, the computer returns to the appropriate previous activity, providing your child with more practice. This automation helps to alleviate anxieties caused by consistently incorrect responses, thus making the learning of mathematical skills a pleasurable and rewarding experience.

With this module, Texas Instruments continues its tradition of applying innovative *Solid State Speech*™ technology to educational activities. Addition and Subtraction 1 is designed to work with or without the Texas Instruments *Solid State Speech*™ Synthesizer (sold separately). However, the Speech Synthesizer must be attached to activate the voice of the computer. The computer's voice then gives directions, reads the equations, and encourages your child to "Try again" when he or she gives an incorrect answer. The addition of speech strengthens the learning process since your child can hear, as well as see, the correct answers.



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## TEXAS INSTRUMENTS HOME COMPUTER

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### YOUR CHILD AND THE COMPUTER

The Texas Instruments Home Computer is a rugged, durable device designed for easy use and care. Teach your child to give the computer the same good care and respect he or she would give a television set, record player, radio, or any piece of electronic equipment:

1. Keep snacks and beverages away from the console.
2. Don't hammer on the keyboard or place heavy objects on it.
3. Don't touch the module contacts. These are recessed in the module to help prevent accidental soiling and/or damage.

The letters and numbers on the keyboard are arranged in the same order found on standard typewriter keyboards. If your child is not familiar with a typewriter or has not used your Home Computer before, take a few minutes to acquaint him or her with the keyboard. Point out the row of number keys at the top and the rows of letter keys below. Show your child how to insert the module and how to select the activities. This brief "tour" of the computer will help reinforce the correct procedures for your child and instill confidence as he or she starts out in a new world of computers.

Today, computers are involved in almost every aspect of life. Working with this module can help your child become familiar with computers and their operation. Since computer-aided instruction is more common in the classroom every year, this knowledge can give your child an important advantage.



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## Addition and Subtraction 1

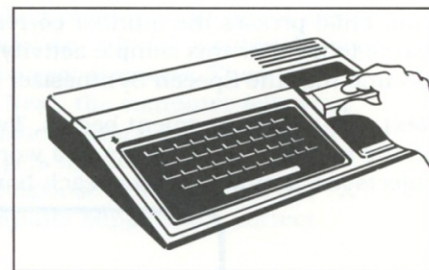
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### USING THE SOLID STATE SOFTWARE™ COMMAND MODULE

To utilize the speech capability of the module, be sure to attach the Texas Instruments Speech Synthesizer to your Home Computer when you use the Addition and Subtraction 1 module. (See the Speech Synthesizer owner's manual for complete information on handling, installing, and caring for the speech unit.)

An automatic reset feature is built into the computer. When a module is inserted into the console, the computer returns to the master title screen. All data or program material you have entered will be erased.

*Note:* Be sure the module is free of static electricity before inserting it into the computer (see page 10).



1. Turn the computer ON, and wait for the master title screen to appear. Then slide the module into the slot on the console.
2. Press any key and the MATHEMATICS COURSEWARE SERIES title screen appears. Next, the ADDITION AND SUBTRACTION 1 title sequence begins. You can press the **ENTER** key within two seconds after the title sequence begins to go on to the ADDITION AND SUBTRACTION 1 selection list, or you can wait for the title sequence to end and the list to appear automatically.

*Note:* To remove the module, *first* return the computer to the master title screen by pressing **QUIT**. *Then* remove the module from the slot. If you have any problem inserting the module, or if it is accidentally removed from the slot while in use, please see "In Case of Difficulty" on page 10.



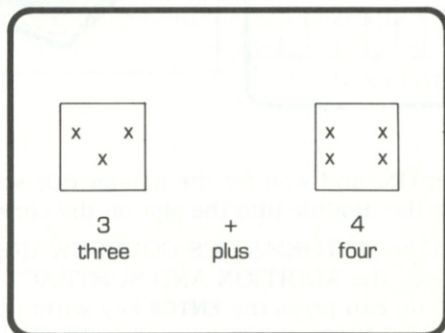
### SAMPLE ACTIVITY

After the Addition and Subtraction 1 title screen appears, the computer displays a selection list of the nine activities in the module.

ACTIVITIES	
PRESS	FOR
1	COUNTING BARS
2	GETTING READY
3	ADDITION ACTION
4	ADD ANOTHER WAY
5	SUBTRACTION ACTION
6	SUBTRACT ANOTHER WAY
7	ACROSS AND DOWN
8	ADDITION TABLE
9	SUBTRACTION TABLE

Your child presses the number corresponding to the activity he or she wants to try. For this sample activity, press **3** for *Addition Action*. (We'll assume that the Speech Synthesizer is attached for this example.)

Next, the tutorial segment begins. Two boxes containing objects appear on the screen. The numbers and words corresponding to the number of objects are positioned below each box.



The objects join together in the left-hand box while the numbers form an addition sentence below. The corresponding word sentence then appears, and the computer reads it aloud.

The next display asks your child if he or she would like to see another example. Your child may press **1** for "Yes." If he or she is ready to go on to the drill, press **2** for "No." For now, press **2**. Then press **BEGIN** to leave the drill and return to the activity selection list.



### SPECIAL FEATURES

#### "Cursor"

The "cursor" is displayed as a white box with a flashing red border. It prompts your child to respond. When the cursor is flashing, you may answer a problem or change displays.

#### Rewards

Each time your child gives a correct answer on the first or second try, the computer responds with one of three visual rewards accompanied by a short tune. Also, in Activity 9 a gold star appears on the screen each time your child answers a set of problems correctly. These rewards reinforce correct answers and help motivate your child to continue.

#### Error Signals

Special care has been taken to make the response to incorrect answers low-key and nonintimidating. If your child presses an incorrect answer, a red "X" appears over the response, and an "uh-oh" sound tells your child that he or she has selected an incorrect response. Then, the incorrect response and the "X" erase. Next, the computer tells your child to "Try again" and the cursor flashes again on the display. If the second response is correct, your child gets the visual and musical reward for that activity. If the second response is incorrect, a red "X" appears over the response and the computer supplies the correct answer.

#### Remediation

In activities 1 through 7, your child has two chances to answer each problem in the drill segment. After the second incorrect response, the computer works through the problem step-by-step, showing how to arrive at the answer. In activities 8 and 9, the computer moves to a tutorial example after one incorrect response. Following activities 8 and 9, a list of up to 32 problems which were answered incorrectly appears with the message "Study these for next time!"

#### Time Out

The computer says and displays "Your turn" at the beginning of each drill activity. If no response is given in ten seconds, the computer gives a short beep and says "Your turn." After five more seconds, the computer beeps again and says "What is the number?" If there is still no response, the computer automatically provides more tutorial review. If the Speech Synthesizer is not attached, the computer gives a short beep and displays either "Your turn" or "What is the number?"



### **ADDITION AND SUBTRACTION 1 ACTIVITIES**

Addition and Subtraction 1 is divided into nine activities designed to illustrate the basic principles of addition and subtraction with the numbers zero through nine. Since each activity builds upon the skills learned in the previous activities, it is best that your child starts with Activity 1 *Counting Bars* and works through the sections in order. The module automatically advances through the activities in their intended sequence. After your child has worked with the module and has mastered the activities, he or she may wish to skip around to a favorite or more challenging drill. Each activity begins with a tutorial routine and lets your child proceed to the drill when he or she is ready.

#### **Activity 1: Counting Bars**

The first activity introduces the concept of counting from zero to nine. In the tutorial segment, stacks of boxes appear on the screen one at a time, and the computer counts them. In the drill, your child is asked to press the number key corresponding to the number of boxes in each stack.

#### **Activity 2: Getting Ready**

Activity 2 reinforces the counting concept by counting pictures of objects. Two large boxes containing objects appear on the display. The objects in each box are counted, and the corresponding number is displayed under the box. In the following drill, the computer displays "How many?", prompting your child to press the key corresponding to the number of objects in each box.

#### **Activity 3: Addition Action**

Addition Action stresses the "bringing together" concept of addition using pictures of objects. Two boxes containing objects appear on the display. The objects in the box on the right move into the left box. The corresponding addition problem appears on the display, and the computer supplies the sum. A word sentence reinforces the concept. The drill asks your child to answer the addition problems.

#### **Activity 4: Add Another Way**

Activity 4 forms a vertical addition sentence from a horizontal sentence. Your child is then asked to answer the vertical addition problems.



#### **Activity 5: Subtraction Action**

Subtraction Action moves a random number of objects out of a box to illustrate the "moving apart" concept of subtraction. One box containing objects appears on the display. Some of the objects leave the box and move to the right. The corresponding subtraction sentence appears on the display, with the computer supplying the answer. In the drill, your child is asked to solve the subtraction problems.

#### **Activity 6: Subtract Another Way**

The sixth activity changes a horizontal subtraction problem into a vertical one. Your child is asked to solve the vertical subtraction problems.

#### **Activity 7: Across and Down**

Activity 7 reviews addition and subtraction skills in both horizontal and vertical formats. A box divided into nine sections appears on the display. The drill provides horizontal and vertical problems for your child to answer.

#### **Activity 8: Addition Table**

This activity uses a game to reinforce the relationship between numbers in addition. The module displays a table with the numbers zero through nine across the top and down the left side. The flashing cursor appears at the intersection of a row and a column, prompting your child to add the two numbers and enter the answer. The game continues until the table is complete.

#### **Activity 9: Subtraction Table**

The last activity is a game designed to reinforce the relationship between numbers in subtraction. A table with numbers on the left side appears on the display. The computer randomly chooses a number to be subtracted from each of the numbers in the box and displays it at the top. Your child is then asked to type the answer to each problem.



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## TEXAS INSTRUMENTS HOME COMPUTER

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### CARING FOR THE MODULE

These modules are durable devices, but they should be handled with the same care you would give any other piece of electronic equipment. Keep the module clean and dry, and don't touch the recessed contacts.

#### CAUTION:

The contents of a Command Module can be damaged by static electricity discharges.

Static electricity build-ups are more likely to occur when the natural humidity of the air is low (during winter or in areas with dry climates). To avoid damaging the module, just touch any metal object (a doorknob, a desk lamp, etc.) before handling the module.

If static electricity is a problem where you live, you may want to buy a special carpet treatment that reduces static build-up. These commercial preparations are usually available from local hardware and office supply stores.

### IN CASE OF DIFFICULTY

If the module activities do not appear to be operating properly, return to the master title screen by pressing **QUIT**. Withdraw the module, align it with the module opening, and reinsert it carefully. Then press any key to make the module title screen appear. (Note: In some instances, it may be necessary to turn the computer off, wait several seconds, and then turn it on again.)

If the module is accidentally removed from the slot while the module contents are being used, the computer may behave erratically. To restore the computer to normal operation, turn the computer console off, and wait a few seconds. Then, reinsert the module, and turn it on again.

If you have any difficulty with your computer or the ADDITION AND SUBTRACTION 1 module, please contact the dealer from whom you purchased the unit and/or module for service directions.

Additional information concerning use and service can be found in your *User's Reference Guide*.



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### THREE-MONTH LIMITED WARRANTY HOME COMPUTER SOFTWARE MODULE

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Texas Instruments Incorporated extends this consumer warranty only to the original consumer purchaser.

#### WARRANTY COVERAGE

This warranty covers the electronic and case components of the software module. These components include all semiconductor chips and devices, plastics, boards, wiring and all other hardware contained in this module ("the Hardware"). This limited warranty does not extend to the programs contained in the software module and in the accompanying book materials ("the Programs").

The Hardware is warranted against malfunction due to defective materials or construction. **THIS WARRANTY IS VOID IF THE HARDWARE HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLIGENCE, IMPROPER SERVICE OR OTHER CAUSES NOT ARISING OUT OF DEFECTS IN MATERIALS OR WORKMANSHIP.**

#### WARRANTY DURATION

The Hardware is warranted for a period of three months from the date of the original purchase by the consumer.

#### WARRANTY DISCLAIMERS

**ANY IMPLIED WARRANTIES ARISING OUT OF THIS SALE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE ABOVE THREE-MONTH PERIOD. TEXAS INSTRUMENTS SHALL NOT BE LIABLE FOR LOSS OF USE OF THE HARDWARE OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE CONSUMER OR ANY OTHER USER.**

Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you in those states.

#### LEGAL REMEDIES

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

#### PERFORMANCE BY TI UNDER WARRANTY

During the above three-month warranty period, defective Hardware will be replaced when it is returned postage prepaid to a Texas Instruments Service Facility listed below. The replacement Hardware will be warranted for three months from date of replacement. Other than the postage requirement, no charge will be made for replacement.



TI strongly recommends that you insure the Hardware for value prior to mailing.

#### TEXAS INSTRUMENTS CONSUMER SERVICE FACILITIES

Texas Instruments Service Facility  
P.O. Box 2500  
Lubbock, Texas 79408

Geophysical Services Incorporated  
41 Shelley Road  
Richmond Hill, Ontario, Canada L4C5G4

Consumers in California and Oregon may contact the following Texas Instruments offices for additional assistance or information.

Texas Instruments Consumer Service  
831 South Douglas Street  
El Segundo, California 90245  
(213)973-1803

Texas Instruments Consumer Service  
6700 Southwest 105th  
Kristin Square, Suite 110  
Beaverton, Oregon 97005  
(503)643-6758

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The following should be read and understood *before* purchasing and/or using the software module.

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